

CLAIMS

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1. A steel cord for the reinforcement of a rubber article comprising a core strand formed by twisting a plurality of filaments, and a plurality of sheath strands arranged around the core strand and each formed by twisting a plurality of filaments, characterized in that at least one of the core strand and the sheath strands is formed by twisting one or more sheath layers made of plural filaments around a core made of one or more filaments, and each of the filaments constituting an outermost sheath layer has a diameter larger than that of the filaments constituting at least a layer located inside the outermost sheath layer.
2. A steel cord for the reinforcement of a rubber article comprising a core strand formed by twisting a plurality of filaments and a plurality of sheath strands arranged around the core strand and each formed by twisting a plurality of filaments, characterized in that the core strand is formed by twisting one or two sheath layers made of plural filaments around a core made of three filaments, and filaments constituting each sheath layer have a diameter larger than that of filaments constituting a layer located inside the sheath layer.
3. A steel cord for the reinforcement of a rubber article according to claim 2, wherein the core strand has one sheath layer and a ratio of total sectional area of all filaments constituting the core strand to area of a circumcircle formed by filaments constituting the sheath layer is not less than 0.715.
4. A steel cord for the reinforcement of a rubber article according to claim 2, wherein the core strand has two sheath layers and a ratio of total sectional area of all filaments constituting the core strand to area of a circumcircle formed by filaments constituting an outermost sheath layer is not less than 0.730.
5. A steel cord for the reinforcement of a rubber article comprising a core strand formed by twisting a plurality of filaments and a plurality of sheath strands arranged around the core strand and each formed by twisting a plurality of filaments, characterized in that each of the core strand and the sheath strand is formed by twisting one or two sheath layers made of plural filaments around a core made of three filaments, and the filaments constituting each sheath layer have a diameter larger than that of the filament constituting a layer located inside the sheath layer.
6. A steel cord for the reinforcement of a rubber article according to

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claim 5, wherein each strand has one sheath layer and a ratio of total sectional area of all filaments constituting the strand to area of a circumcircle formed by filaments constituting the sheath layer is not less than 0.715.

7. A steel cord for the reinforcement of a rubber article according to claim 5, wherein each strand has two sheath layers and a ratio of total sectional area of all filaments constituting the strand to area of a circumcircle formed by filaments constituting an outermost sheath layer is not less than 0.730.

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8. A steel cord for the reinforcement of a rubber article according to claim 2 or 5, wherein a distance between mutual steel filaments in each layer of the strand is not more than 0.014 mm.

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9. A steel cord for the reinforcement of a rubber article comprising a core strand formed by twisting a plurality of filaments and a plurality of sheath strands arranged around the core strand and each formed by twisting a plurality of filaments, characterized in that the sheath strand is formed by twisting two sheath layers each made of plural filaments around a core made of one or more filaments, and when a diameter of a filament constituting an outermost sheath layer in the sheath strand is ϕ_s (mm) and a diameter of a circumcircle inscribing all filaments in the outermost sheath layer is Φ (mm), they satisfy a relation of $0.55 \leq \Phi/6.14\phi_s \leq 0.90$, and when a diameter of a filament constituting an outermost sheath layer in the core strand is ϕ_c (mm), it satisfies a relation of $\phi_s \leq \phi_c$.

10. A steel cord for the reinforcement of a rubber article according to claim 9, wherein all filaments other than filaments constituting the outermost sheath layer in the sheath strands has the same diameter.

11. A steel cord for the reinforcement of a rubber article according to claim 9, wherein all filaments other than filaments constituting the core in the sheath strands have the same diameter.

12. A steel cord for the reinforcement of a rubber article according to claim 9, wherein all filaments other than filaments constituting an outermost sheath layer in the core strand have the same diameter.

13. A steel cord for the reinforcement of a rubber article according to claim 9, wherein all diameter other than filaments constituting the core in the core stand have the same diameter.

14. A steel cord for the reinforcement of a rubber article according to

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claim 9, wherein all filaments constituting the core strand have the same diameter.

15. A steel cord for the reinforcement of a rubber article according to claim 9, wherein filaments constituting the outermost sheath layer in the sheath strand have a diameter of 0.20-0.50 mm.

16. A steel cord for the reinforcement of a rubber article according to claim 9, wherein the filaments have a tensile strength of not less than 3000 MPa.

17. A steel cord for the reinforcement of a rubber article according to claim 9, wherein the cord has a cord construction formed by arranging six sheath strands around one core strand, each of these strands has a construction formed by arranging two sheath layers made of plural filaments around a core made of three filaments.

18. A steel cord for the reinforcement of a rubber article according to claim 9, wherein a twisting direction of the outermost sheath layer in the sheath strand is the same as that of the sheath strand.

19. A steel cord for the reinforcement of a rubber article according to claim 9, wherein the cord has a wrapping filament helically wound along an outer periphery of the cord.

20. A tire comprising a carcass toroidally extending between a pair of bead portions as a skeleton and a belt disposed on an outside of the carcass in a radial direction and comprised of plural belt layers, characterized in that steel cords as claimed in claim 1 are applied to at least one of the carcass and the belt layers.

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